Hydrologic Model Manager

Short Name	HMS
Long Name	Hydrologic Modeling System
Description	
Model Type	Semi-distributed model
Model Objectives	To predict the influence of human activities on catchment hydrology
Agency _Office	Laboratory of Water Resources, Helsinki University of Technology, Espoo, Finland
Tech Contact	Dr. H. Koivusalo
Model Structure	The model is based on division of a catchment into hydrologically similar units (HSU), with each unit representing possibly non-contiguous areas which share common runoff generation mechanisms. Each HSU is assigned a hillslope-scale water balance scheme called a characteristic profile method (CPM). The total runoff generated from all HSUs is routed through the channel network using a streamflow routing procedure. The modeling system includes submodels for canopy, snow, soil water movement, and channel processes.
Interception	
Groundwater	
Snowmelt	
Precipitation	
Evapo-transpiration	
Infiltration	
Model Paramters	Many parameters depending on the model structure and the number of HSUs.
Spatial Scale	Small HSU or sub-basin
Temporal Scale	Continuous
Input Requirements	Hydrometorological data, rainfall, soils maps, land use maps, and basins maps.
Computer Requirements	PC with windows
Model Output	Discharge hydrograph
Parameter Estimatn Model Calibrtn	Calibration by optimization on the basis of submodel for channel processes against observed data.
Model Testing Verification	Tested on a number of watersheds.
Model Sensitivity	Not reported
Model Reliabiity	Nor reported but the model has been found to yield satisfactory results.
Model Application	Rudback catchment (small, forested) and Lestijoki catchment (1,290 square kilometers) in Finland
Documentation	Not available but it can be obtained form Dr. H. Koivusalo
Other Comments	The model seems promising for practical applications. References: Koivusalo, H., Karvonen, T. and Lepisto, A., 2000. A quasi-three dimensional model for predicting rainfall-runoff processes in a forested caychment in

	southern Finland. Hydrology and Earth System Sciences, Vol. 4, No. 1, pp. 65-78. Kakkonen, T., Koivusalo, H., Karvonen, T. and Lepisto, A., 1999. A semi-distributed approach to rainfall-runoff modeling-Aggregating responses from hydrologically similar areas. In MODSIM '99, edited by L. Oxley and F. Scrimgeour, The Modeling and Simulation Society of Australia and New Zealand, Hamilton, New Zealand, pp. 75-80.
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Developer	
Technical Contact	
Contact Organization	